The following species were collected at Chatham Bay:

Cerithium adustum Kiener[5]
Conus dalli Stearns
Cymatium vestitum Hinds
Fissurella virescens Sowerby
Latirus tuberculatus Broderip
Nerita bernhardi Reclus
Thais crassa Blainville

The following species were secured at Wafer Bay:

Acmaea (Collisella) aeruginosa Middendorff
Acanthina brevidentata Wood
Cantharus gemmatus Reeve
Conus tiaratus Broderip
Cypraea moneta Linnaeus
Fissurella virescens Sowerby
Harpa crenata Swainson
Hipponix cf. *grayanus* Menke
Littorina aspersa Philippi
Littorina conspersa Philippi
Nerita bernhardi Reclus
Nerita scabricosta var. *ornata* Sowerby
Neritina pilsbryi Tryon[6]
Ostrea callichroa Hanley
Ostrea palmula Carpenter
Pedalion chemnitzianum d'Orbigny
Planaxis planicostatum Sowerby
Siphonaria gigas Sowerby
Siphonaria gigas var. *characteristica* Reeve
Thais crassa Blainville
Thais biserialis Blainville
Thais columellaris Lamarck
Thais patula Linnaeus
Tetraclita squamosa milleporosa Pilsbry

LIMPETS BORED BY NATICA?

BY WM. B. MARSHALL

In THE NAUTILUS for July in a note on William Beebe's "Snail Folk" (Nature Magazine for April), which shows the Bermudian *Natica canrena* on a crag eating a limpet, Pilsbry says, "I have never seen a bored limpet or a *Natica* climb the rocks for its prey."

[5] Mr. A. M. Strong kindly pointed out to the writer, that the figures, 2 and 3, on Kiener's plate 13, are apparently reversed. The form recorded here from Cocos Island, is the smooth one described by Kiener as *adustum* but indicated as *maculosum* on the plate.

[6] The specimens referred to this species in the present collection might be referred to *N. latissima* Sowerby, but since they have somewhat less developed elongations on the aperture and a light purplish colored shell they are referred to Tryon's species. The specimens were collected in the creek at Wafer Bay, about 50 meters from the beach.

This statement aroused my curiosity, for although I have been handling limpets for forty-five years or more, I have never thought to look whether any of them were bored by other mollusks seeking to eat the animal. Recently I have examined great numbers of limpet shells and have been unable to find one that was bored by a predacious mollusk. Some boring bivalves do bore into some of the largest limpets for domicile, but not for the purpose of eating the animal. As Pilsbry and I are the only two who have expressed an opinion on the eating of the limpet and the opinion has been in the negative, the evidence at hand seems to be one hundred per cent. opposed to Beebe's statement. As no bored limpets have been found (so far as I know) the conclusion seems to be that there is something about a limpet that makes it unpalatable or otherwise unsatisfactory to predacious mollusks seeking food.

It may be that the limpet referred to by Beebe is one of the keyhole limpets, namely, *Fissurella barbadensis* Gmelin, but if he intended to indicate this animal he should not have said limpet, but should have said keyhole limpet. So far as I know, the plain name limpet is never applied to the perforated shells, but is always accompanied by the classifying word "keyhole", but the keyhole limpet may afford Mr. Beebe a way out of what appears to be a rather embarrassing position, and yet I can hardly believe that it will afford him a fairly satisfactory exit from the stage, because, as Pilsbry and I apparently have shown the limpet is unsatisfactory food to other mollusks and therefore because of a general similarity between the limpets and the keyhole limpets we are more or less justified in thinking that the keyhole limpet is just as unsatisfactory as the limpet. Furthermore, it seems that nature would attend to her business better than to put a hole in the shell of the keyhole limpet through which a preying mollusk could rob the bank without doing a tap of work in boring through the safe. Finally, I may say that I examined great numbers of keyhole limpets to see if any of them had been bored, and I was unable to find a single specimen that showed a boring or even the beginning of a boring.

The picture in Beebe's article on page 211 shows a large "limpet" at the middle of the "crag". This particular figure is a better illustration of a keyhole limpet than many of the pictures in early scientific publications. The keyhole seems to be perfectly clear there. The picture used on that page and the picture on page 209 showing the moon snail eating a "limpet" are very misleading. Until one concentrates his attention upon size, the "crags" seem to be very high and massive, but when he applies his knowledge of the size of the *Natica* and the ordinary "limpets" he sees at once that the crag is just a small stone and that the snails are only a couple of inches above the surface of the water.

The limpets look as though they might be a titbit for the boring mollusks because they appear dainty, and many of them have shells that are very thin and could be bored with a few movements of the file, and they are very slow of motion, so that the boring robber while at work would not be troubled in staying astride of his mount. It would pay Mr. Beebe to submit for identification specimens of the limpet which he saw being bored. I may say that Mr. Beebe's article is not wasted, whether he states fact or fiction, because, as I have said above, it has been the means of directing my attention to the improbability of boring in limpets or in keyhole limpets. If Beebe had stated a well known fact, that would have been the end of it, because every one would have known the fact already; but when he makes a statement that appears doubtful or fictional it calls forth replies from others who have been compelled to look up data which may have escaped their attention for many years. So, supposing him to be in error, we may say, blessed are the uses of error.